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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/500,569	07/01/2004	Cyrielle Cheng	0513-1111	5217

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EXAMINER

BRINSON, PATRICK F

ART UNIT PAPER NUMBER

3754

DATE MAILED: 09/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/500,569

Applicant(s)

CHENG ET AL.

Examiner

Patrick F. Brinson

Art Unit

3754

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5, 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. 4,312,383 to **Kleykamp** in view of U.S. 5,588,468 to **Pfleger**.

The patent to **Kleykamp** discloses a hose including a corrugated outer tube made of a polymeric material and having alternating projections and recesses with the recesses having inwardly facing convex surfaces and an inner tube made of a polymeric material and having smooth inside and outside surfaces with the outside surfaces of the inner tube bonded against the convex surfaces. Col. 4, lines 4-10 disclose that the two layers may be formed from the same or different polymeric materials. **Kleykamp** does not specifically disclose the outer layer as a polyamide or the inner layer as fluorinated thermoplastic material. The patent to **Pfleger** discloses a multilayer corrugated conduit for transporting automobile fluids, the conduit comprising a multi-layer tube comprising an inner layer (4) based on a thermoplastic elastomer material, a

corrugated outer tube (2) which is in contact with the inner tube, which is made of a thermoplastic material based on polyamide and means (3) for connecting together the inner and outer layers, as recited in claim 1. The burst-resistant external layer (2) is a single layer tube and preferably consists of polyamides selected from the group consisting of PA 6, PA 66 and PA 12, as recited in claims 2 and 4. Col. 2 discloses the inner layer as being a single layer tube comprising a fluorinated thermoplastic, such as ETFE and PVDF, as recited in claims 3 and 5. It would have been obvious to one having ordinary skill in the art at the time to modify the hose of **Kleykamp**, the outer layer of a polyamide, the inner layer of a fluorinated thermoplastic, as suggested by **Pfleger** in order to provide a corrugated pipe having an external, corrugated layer that is corrosion resistant and burst resistant and a smooth inner bore that is chemically resistant to fluid that is transported through it, and which assures fluid flow therethrough in a non turbulent manner.

2. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Kleykamp** in view of **Pfleger** as applied to claims 1 or 2 above, and further in view of U.S. 6,776,195 to **Blasko et al.**

The patent to **Kleykamp**, as modified, discloses the recited structure, including a hose including a corrugated outer tube made of a polymeric material and having alternating projections and recesses with the recesses having inwardly facing convex

surfaces and an inner tube made of a polymeric material and having smooth inside and outside surfaces with the outside surfaces of the inner tube bonded against the convex surfaces, wherein the inner layer is based on a fluorinated thermoplastic material and a corrugated outer tube which is in contact with the inner tube, made of a thermoplastic material based on polyamide. The burst-resistant external layer is a single layer tube and preferably consists of polyamides selected from the group consisting of PA 6, PA 66 and PA 12, and the inner layer as being a single layer tube preferably consisting of polyolefins, the preferred halogenated polymers including fluorinated homopolyolefins such as PVDF, PTFE or ETFE, as recited in claims 3-5 and 7. The patent to **Blasko et al.** discloses a tubular polymeric composite for tubing and hose constructions utilized in fuel and oil transfer. Col. 6, lines 61-66, discloses that the inner layer (18) is a fluoropolymer, possibly an ETFE based material that has been modified, such as an EFEP. This modified material is able to be fusion bonded by co-extrusion or molding to nylon or other polyamide materials at lower temperatures. It would have been obvious to one having ordinary skill in the art at the time the invention was made to form the hose of **Kleykamp**, as modified, with EFEP as the inner fluorinated thermoplastic material, as suggested by **Blasko et al.** in order to provide a fluoropolymer that may easily bond with polyamide within a range of the preferred fusion bonding temperature of the rein.

Response to Arguments


3. Applicant argues that there is no suggestion or motivation to combine the teachings of **Pfleger** and **Kleykamp** since **Pfleger** discloses a corrugated inner tube and a corrugated outer tube, and Applicant further states that replacing the inner corrugated tube would reduce the flexibility of the **Pfleger** pipe. The rejection of **Pfleger** in view of **Kleykamp** has been withdrawn. Applicant also states that there is no motivation to combine **Kleykamp** in view of **Pfleger** either because that combination fails to have a reasonable expectation of success. Applicant states that **Kleykamp** does not disclose the outer tube being made of a thermoplastic material based on a polyamide or that the inner tube is based on a fluorinated thermoplastic material. **Kleykamp** discloses a pipe having an outer corrugated tube and a smooth inner tube, wherein both are disclosed are being made from a polymeric material and it is further disclosed that these tubes may be of different synthetic plastic materials. **Pfleger** discloses a tube for transporting coolant, as does the instant invention, and discloses the inner layer (7) that is inert to and does not swell in cooling agents and an outer layer (5) that is rigid and load-bearing and has a high pressure resistance affording high bursting strength. The excellent resistance affording high bursting strength is provided by the polyamide outer layer and the inner, swelling-resistant polymers for the inner layer includes fluorinated materials including ETFE, PTFE, and PVDF. It would have been obvious to form the inner layer of **Kleykamp** with a

fluorinated material, including those listed, suggested by **Pfleger**, or with the EFEP, suggested by **Blasko et al.**, in order to provide chemical resistance to the coolant flowing there through, and to form the outer layer of a polyamide in order to provide the external layer with resistance to pressure and stress. Applicant states that the combination of materials is based on a structure in which both the inner and outer layers are corrugated and would be problematic if used in a tube having a smooth inner layer and a corrugated outer layer. It should be noted that **Pfleger** does not state that this specific combination of materials are necessary to achieve a higher resistance and would not also have a higher burst resistance with another combination of materials. In fact, other materials are disclosed that may be utilized to form both inner and outer layers. As to the **Kleykamp** reference including a heat fused area or bond (75), it should be noted that claim 1 requires a means for connecting together the outer and inner tubes, which is what the metallic particles provide. Even if not required by the present invention, it should be noted that the tube of **Kleykamp** includes additional structure not required by Applicant's invention, it must be noted that the **Kleykamp** tube discloses the invention as claimed. The fact that it discloses additional structure not claimed is irrelevant.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Patrick F. Brinson** whose telephone number is (571) 272-4897. The examiner can normally be reached on M-F 7:30-3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Michael Y. Mar** can be reached on (571) 272-4906. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Patrick F. Brinson
Primary Examiner
Art Unit 3754

P. F. Brinson
August 29, 2005